APPENDIX L - Preparation Guidelines for Project Study Report

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APPENDIX L - Preparation Guidelines for Project Study Report

This exhibit is comprised of two parts. The first part is an Design and Local Programs Program (DLPP) advisory regarding changes that have occurred to the PSR process since the guidelines were approved by the CTC on September 12, 1991. The second part is the 1991 "Guidelines for the Preparation of Project Study Reports" (CTC Guidelines) as approved by the CTC.

Advisory

Note that the CTC Guidelines in this Appendix are not entirely current. There are several differences between the CTC Guidelines and the current procedures described in this manual due to changes in laws, regulations, policies and procedures. The differences are as follows:

- Government Code Sections 14529.12 and 14529.13 referred to on page 1 of the CTC Guidelines are no longer in effect. The current Caltrans policy is stated in Chapter 2, Section 5. That section also contains discussions on staffing responsibilities, and on special care in identification of right of way, for special funded projects.

- The CTC Guidelines state that a PSR is used for projects that are capacity increasing (see page 3 of the CTC Guidelines); however, PSRs are also used for projects that are not capacity-increasing. PSRs are also to be prepared for state and regional project candidates and special funded project proposals in the following programs:

  - Bridge Replacement Projects that are located on entirely new alignments
  - Urban Freeway Median Barrier Retrofit Projects
  - Protective Betterments Projects
  - Safety Improvements Projects
  - Safety Roadside Rest Projects
  - Vista Point Projects
  - Traffic Operational Improvements that are not proposed for the TSM Plan
  - HOV Projects that are not proposed for the TSM Plan
  - New Curb Ramp (ADA) Projects
  - Park and Ride Lot Modification (ADA) Projects

- New Highway Construction
- Major Toll Bridge New Construction

PSRs are not prepared for "Minor A" or "Minor B" projects.

- The current composition of the Project Development Team differs from the description on page 6 of the CTC Guidelines. For current information, refer to Chapter 8, Section 4.

- The term "Value Analysis" is currently used in place of the term "Value Engineering" used on page 8 of the CTC Guidelines.

- Hazardous waste problems, or potential problems, must be discussed in the PSR, along with a recommended action for avoiding or mitigating the hazardous waste site. This is discussed in Chapter 18, Article 2.

- Measurements are to be expressed in metric units.

- The Fact Sheet for exceptions to mandatory design standards listed on page 12 of the CTC Guidelines has been replaced by the Design Exceptions Fact Sheet exhibits found in Appendix BB.

- The recommendation for a project alternative for programming is no longer presented by memo as described on pages 12 and 13 of the CTC Guidelines. It is now included in the PSR.

- A "Recommendations" section is now included in the PSR. This item does not appear in the outline on page 17 of the CTC Guidelines.

- The wording for the registered civil engineer's statement on page 19 of the CTC Guidelines has since been revised. The current wording is:

  "This Project Study Report has been prepared under the direction of the following registered civil engineer. The registered civil engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions are based."

- The Cost Estimating Guidelines (CTC Guidelines pages 20-26) have been replaced by new guidelines found in Appendix AA.

- The requirement for a "Minimum Project Alternative" is not in the CTC Guidelines PSR outline. This is described in Chapter 9, Article 2.

- The requirement for "Staging" is not in the CTC Guidelines' PSR outline. This is described in Chapter 9, Article 2.

- The requirements pertaining to existing pavement considerations on widening projects are not in the CTC Guidelines' PSR outline. This is described in Chapter 8, Section 7.

- The requirements pertaining to a formal safety review are not in the CTC Guidelines. This is described in Chapter 8, Section 7.

- The term "environmental clearance" is no longer used as on pages 9 and 18 of the CTC Guidelines. Use the appropriate term depending on the context. In this context use "environmental document" or "environmental processing type".

- The CTC Guidelines do not contain the discussion on Community Involvement Plans contained in Chapter 22, Article 4.

- The discussion on PSR considerations for Special Funded Projects, concerning concept approval and staffing responsibilities, is not covered in the CTC Guidelines. This is described in Chapter 8, Section 5.

- The level of Federal involvement in the stewardship of the project (i.e. Exempt, Certification Acceptance or Project by Project) is now included in the PSR but is not in the CTC Guidelines' PSR outline. This is described in Chapter 2, Section 7.

- The use of the PSR - New Connection, when a new public road connection to an expressway is proposed, is the means used to obtain early confirmation. Details are described in Chapter 27, Article 2.

- The NEPA/404 MOU requires that the costs of avoiding, minimizing, and compensating impacts to waters of the U.S. and associated sensitive species be included in the project cost of the practicable alternatives evaluated. Refer to Chapter 1, Section 4.

- The items that specifically need to be addressed in PSRs that propose new or revised interchanges are described in Chapter 27, Article 5. Also in this Article is the requirement to submit the unapproved PSR to FHWA for conceptual approval if a new or revised interchange is proposed on the Interstate System.

- The Division of State and Local Project Development referred to on page 4 of the CTC Guidelines in now known as the Design and Local Programs Program.

- The Office of Project Planning and Design (OPPD), referred to on pages 11 and 20 of the CTC Guidelines, has been eliminated, although its former duties still exist within the Design and Local Programs Program (DLPP), which should now be referred to instead of OPPD.

- The Traffic Management Plan, referred to on pages 9 and 18 of the CTC Guidelines, is now called the Transportation Management Plan.

- SB 1565 of 1994 and the Caltrans Action Request dated September 20, 1995 require that support budgets be established for major state highway projects. Estimated PY effort and other support costs of project

development and construction from the time the project is initially programmed through the final stages of construction should be included in the PSR. The proposed schedule should be based upon when the District realistically expects that the project would be programmed, typically in the last two years of the program. This information is not required for Minor projects.

The cost of any specialty contracts or other atypical direct project costs which may be required for the project should be estimated by the proposed fiscal year. Costs for PY estimates should not be included. The Project Management Program (PMP) will establish average dollar costs per PY for various functions, including salary, benefits, CADD usage, travel and other direct costs. Once a project is about to be programmed, these rates will be applied to the estimated PY effort by PMP to establish the project's support budget.

The following table is an example of how project support cost estimates should be incorporated in the PSR under item 9 of the PSR Outline. Do not include the support costs in the Preliminary Project Cost Estimate Summary.

Project Support:

Proposed Program FY	District PY'S			Engineering Service Center PY'S					FY Total PY'S	Other Costs ($)
				Structures		METS and Others		Office Engr		
	Design	R/W	Constr	Design	Constr	Design	Constr			
TOTAL ESTIMATED PROJECT PY'S AND OTHER SUPPORT COSTS:									PY'S	$*

* Note: Dollar value of estimated specialty contracts, etc. to be shown only when applicable.

Guidelines for the Preparation of Project Study Reports

September 12, 1991

STATE OF CALIFORNIA
Department of Transportation
Division of State and Local Project Development
Office of Project Planning & Design

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CHAPTER 1

Introduction

Introduction

The purpose of these guidelines is to assure a consistent approach in the preparation of Project Study Reports (PSRs) regardless of who prepares the document.

A PSR is an engineering report, the purpose of which is to document agreement on the scope, schedule, and estimated cost of a project so that the project can be included in a future State Transportation Improvement Program (STIP).

Existing Law

Section 14030 of the Government Code states that "The powers and duties of the Department shall include, but not be limited to ... planning, designing, construction operating and maintaining those transportation systems which the Legislature has made, or may make the responsibility of the Department ...".

Streets and Highways Code, Section 90, also states the Department shall have full possession and control of all State highways and all property and rights in property acquired for State highway purposes. The Department is authorized and directed to lay out and construct all State highways between the termini designated by law and on the locations as determined by the Commission.

The California Transportation Commission and the Department of Transportation are required to program, budget, and expend funds in the State Highway Account in the State Transportation Fund in accordance with long-range Regional Transportation Plans and a specified sequence of priorities. The plans and priorities lead to the development of Regional Transportation Improvement Programs (RTIP) and a STIP. These Programs cover 7-year periods, with the Regional Programs produced in odd-numbered years and the State Program in even-numbered years.

The California Transportation Commission may include a highway capacity-increasing project in the STIP only if a project studies report has been completed for that project.

Sections 1459.11, 14529.12, and 14529.13 of the Government Code establish procedures to be followed when developing tax measure and other locally funded projects on the State highway system. Additional procedures related to special funded projects are included in the Caltrans "Procedures Manual for Special Funded State Highway Projects."

AB 2038

Chapter 715, Statutes of 1990 (AB 2038) requires the following new considerations:

- Permits the Regional Transportation Improvement Program (RTIP) to include a future list of capacity-increasing State highway projects in priority order for purposes of the initiation of project study reports. The bill requires the list to be submitted to the Department.

- Specifies that the Department of Transportation, in consultation with representatives of cities, counties, and regional transportation planning agencies, shall prepare draft guidelines for the preparation of project studies reports by all entities. The Commission shall adopt the final guidelines not later than October 1, 1991.

- Specifies that the Department may be requested to prepare a project study report for a capacity-increasing project proposed for a future State Transportation Improvement Program and would allow the requesting entity to prepare the report if the Department determines that it cannot complete the report in a timely fashion. Statutes specify time limits for the Department's response and approval.

- Requires the Department of Transportation to seek assistance from regional and local transportation agencies or other entities for the preparation of project studies reports for projects contained in the regional priority list. This action is required when the report cannot be completed so as to allow a project to be eligible for inclusion in the upcoming State Transportation Improvement Program.

Intent

These are guidelines, not prescriptive regulations. The California Transportation Commission intends that these guidelines provide a framework for preparation of PSRs, describing a quality and breadth of examination and information that the Commission expects for scope, schedule, and cost estimates for projects.

Above all, the Commission intends that the process and requirements for PSRs expressed through these guidelines be as simple, timely, and workable as practical, given that a PSR must be prepared at the front end of the project development process, before environmental evaluation and detailed design, and that it must provide a sound basis for commitment of future state funding. A PSR also provides a key opportunity to achieve consensus on project scope, schedule, and proposed cost among the Department and involved regional and local agencies.

The Commission intends that these guidelines be applied in a flexible manner using common sense judgment appropriate for the complexity of individual projects, and used consistently for PSRs statewide, whether prepared under the direction of the Department or a regional or local agency.

Applicability

These guidelines shall apply to all State and locally funded vehicle capacity-increasing projects on the State highway system and any segment of a transit project within the State highway right of way. The guidelines are not intended for use on transit projects unrelated to the State highway system or on STIP projects off the State highway system.

The Commission expects that scope, schedule, and estimated cost for projects off the State highway system that are proposed for the STIP will be examined by local agencies to a degree comparable to what would be required with a PSR under these guidelines.

CHAPTER 2

PSR Preparation Procedures

ARTICLE 1 - General

Timing

Since the statutes require a completed PSR for projects before being added into a STIP, any agency preparing a PSR for a project to be nominated for an upcoming STIP should start the PSR so that it will be completed in time for inclusion in a RTIP or PSTIP. While these guidelines indicate a timeline of 6 - 13 months for preparation and approval of a PSR, the actual timeline could be longer or shorter depending on project complexity and degree of agency consensus.

Project Development Process

The project development process, from inception through Plans, Specifications and Estimate (PS&E), is described in the Caltrans Division of State and Local Project Development's "Project Development Procedures Manual." The PSR preparation procedures described below and detailed in the flow chart on page 14 have been derived from this document.

The project development process begins with concept studies and carries forward to the completion of construction. This development process is tied to the legal requirements of environmental laws and regulations, and melds engineering requirements and Caltrans' management approval steps with the environmental process.

Project Management

Under the project management approach, responsibility to deliver a quality project on time and within budget is assigned to a single individual, the Project Manager. Typically the Project Manager is responsible for all project development activities from project initiation (Project Study Report process) to start of construction. A Caltrans Project Manager is assigned for every capital outlay project including local agency projects.

Registered Civil Engineer

The PSR shall be prepared under the direction of a registered Civil Engineer.

Need And Purpose

A project must satisfy a clearly defined need and purpose. It must meet system strategies as defined in State, regional, and local plans, goals, and objectives. It must also consider air quality requirements. Caltrans' policy is to evaluate alternative solutions that avoid or reduce significant adverse environmental impacts and to select the alternative which causes the least environmental damage and yet serves the essential transportation need.

ARTICLE 2 - Preparation Procedures

(Refer to the Flow Chart on Page 14)

Preparation of Priority List

In addition to the Regional Transportation Improvement Program, the entity adopting that program may prepare and adopt a future development list of capacity increasing State highway projects in priority order for purposes of the initiation of project studies reports. These lists shall be limited to the regional summation of funds available for capacity-improvement projects in the adopted STIP when distributed according to the county minimum formula defined in Section 188.8 of the Streets and Highways Code.

How to Request Preparation of a PSR

Once a project is placed in an adopted development list of capacity increasing State highway projects, a requesting entity which desires to have a PSR prepared may submit a request to the Caltrans District Director where the project is located. This should be in the form of an approved resolution from the appropriate local agency.

Pre-PSR Meeting

Statutes provide that Caltrans shall have 30 days to determine whether it can complete the requested report in a timely fashion (in time for inclusion in the next STIP). If Caltrans determines it cannot prepare the report in a timely fashion, the requesting entity may prepare the report.

Local, regional and State agencies are partners in planning regional transportation improvements. Input from all parties is required at the earliest possible stages and continues throughout the process. The Project Manager should take the lead in coordination activities.

Regardless of who will prepare the PSR, a meeting with Caltrans and the appropriate local entity (or entities) shall be held.

The purpose of this meeting(s) is(are) to:

1. Review the PSR development process.

2. Agree on the intended scope of the project.

3. Agree on the basic design standards to be met.

After review of the process to be followed, agreement on the design concept and scope should be reached. Ideally, the design concept and scope should have been developed at the system-plan level or Transportation Plan stage and prior to preparation of the priority list. The design concept and scope may be refined further at this time and later at the project level as long as the basic concept and scope features at the plan level remain.

At the Transportation Plan stage, "design concept" means the type of facility, such as freeway, expressway, conventional highway, rail, bus, etc. "Design scope" means the design aspects which will affect a proposed facility's impact on the region as it relates to vehicle or person-carrying capacity and control. For highway projects, this can be features such as number of lanes to be constructed or added, location and length of project, preferential treatment for HOVs, and general spacing and location of interchanges, etc.

The PSR is the initial engineering document that provides the transition between the system plan and the proposed project. At the pre-PSR meeting, the engineering specifics of the design scope should be discussed. These include the major features of work associated with the project such as alternatives that substantially lessen or avoid environmental effects, number of lanes (current and future), right-of-way requirements, and interchange type and location. When the project is on an existing facility, consideration must be given to improving existing features to current standards. Additional items that need to be considered are structures with nonstandard vertical or horizontal clearances, inadequate bridge railing, pavement in need of rehabilitation, deteriorated or inadequate drainage systems, narrow shoulders, replacement landscaping, ramp metering, nonstandard guardrailing, and seismic retrofit requirements. Standards involving safety and operational integrity are not to be compromised. Where justified, there may be cases where exceptions to other design standards may be considered.

PSR Preparation

- Form the Basic Project Development Team

  A Basic Project Development Team (PDT) is established for each project by the Caltrans District Director regardless of who is preparing the PSR.

  The Basic PDT is comprised of the assigned Caltrans Project Manager and representatives from the Project Development, Environmental, Right of Way, Maintenance and Traffic Operations units, and a Regional Transportation Planning Agency (RTPA) representative. Representatives from other Functional Units/Value Engineering and local and regional entities are added as needed.

  If the PSR is to be prepared by a local entity, the local entity shall furnish Caltrans a list of appropriate PDT members.

PSR Preparation (cont.)

- Field Review of the Project Site

  It is important that the project team review the project in the field. This should be an ongoing activity as needed. Field reviews often identify project features that may otherwise not be noticed. The reviews should focus on factors that could affect the project.

- Obtain and review existing reports, studies, mapping or other information. (Note: The Project Manager can assist in obtaining this information for local entities.)

  To adequately prepare a PSR, it is essential to obtain appropriate mapping. Ideally, aerial contour mapping should be used. This mapping will be used for the development of preliminary alternatives, horizontal and vertical alignment, and other studies. If aerial contour maps cannot be provided at this stage, other mapping such as mosaics or as-built plans may be appropriate. If proposed structures cannot be accurately plotted or located on the aerial contour maps, more accurate maps (or larger scale drawings) should be used to show the location and limits of the proposed structures.

  The Transportation Concept Report (formerly Route Concept Report), District System Management Plan, Regional Transportation Plan, Congestion Management Program, and the State Implementation Plan for air quality should be reviewed. The Transportation Concept Report describes current corridor conditions and what the ultimate corridor development will be. This report is mandated by California Government Code Section 65086(a). The System Management Plan identifies current and long-range strategies for the management and development of the transportation system. Appropriate information from these products can serve to document the need and scope of the project.

  Important background information can often be obtained in previous related or adjacent studies. A search and review of project history files and previously studied but suspended projects can give an historical perspective to the current proposal.

PSR Preparation (cont.)

- Identify additional data that will be required.

  Additional data that will be needed includes:

  - hazardous material/waste information
  - preliminary materials (geotechnical) information
  - environmental resources inventory and issues
  - landscape information
  - traffic data (existing and forecasted traffic, level of service, capacity adequacy, operational analysis, accidents, etc.)
  - preliminary structure studies
  - right of way and utility considerations
  - local planning (land use)
  - staffing
  - programming and scheduling

- Perform Initial Engineering Studies

  These studies should focus on the physical characteristics of the project area and the engineering features and standards required to develop a project. Possible alternatives need to be explored.

- Develop Alternatives, Cost Estimates, and Schedules

  Alternatives need to be developed that will satisfy project goals, be cost effective, and avoid or minimize environmental and right-of-way effects. The alternatives need to be estimated and a schedule needs to be prepared. The estimates, although preliminary, need to be factual.

  If agreement cannot be reached between the Department and the local entity on alternates, the PSR will include a cost estimate and supporting information for both alternates.

  Value Engineering is the preferred method of developing alternatives. Value Engineering is the systematic application of recognized analytical techniques to identify a project's function, identify alternatives, and analyze the alternatives to identify the one that fully meets the project's function at the lowest overall cost. Value Engineering is recommended at this stage.

  The development of cost estimates requires consideration of the impacts of each alternative. The following areas should be examined for impacts and associated mitigating cost.

PSR Preparation (cont.)

– Environmental

A Preliminary Environmental Evaluation should be prepared for each feasible alternative. The Preliminary Environmental Evaluation should:

Develop an inventory of environmental resources and a list of the potential project issues or impacts which could significantly delay the project or affect the viability of any project alternative.

Determine additional studies that are needed to complete the environmental clearance (noting as necessary any seasonal constraints for these studies).

Determine the type of environmental clearance proposed and a tentative schedule for its completion and if an Environmental Document is required, identify the Lead Agency for its preparation.

– Hazardous Materials

Generally, every project which includes the purchase of new right-of-way, excavation, and/or structure demolition or modification will require at least an Initial Site Assessment (ISA) to determine if there is any known or potential hazardous materials within the proposed project limits.

– Traffic

Traffic Management Plans (TMPs) will be required if significant construction delays are anticipated. TMPs develop construction traffic handling practices such as lane closures, detours, and work-hour restrictions to minimize delays. Costs associated with TMPs should be included in the PSR Estimate.

PSR Preparation (cont.)

– Structures

As soon as concept geometrics have been developed, it is necessary to develop advance planning studies and cost estimates for the various structure alternatives. The advance planning studies must show sufficient detail so that consideration for environmental, permit and traffic requirements can be cost estimated.

The method of providing these preliminary studies shall be discussed with the Division of Structures Liaison Engineer assigned to the District. The Liaison Engineer will provide recommendations on preparation of the preliminary studies. The studies will be prepared by HQ Office of Structures Design (OSD), or if prepared by others, will be reviewed by OSD during the District Review process.

– Materials

Existing materials information (from old projects, etc.) should be obtained from Caltrans or other sources as a first step. If critical areas, such as slides, erosion, poor foundations, etc., are noted during field reviews, a preliminary materials investigation should be conducted.

– Landscaping

Some projects require landscaping which can be significant. At the PSR stage, efforts should be made to identify any new or replacement landscaping that is required. Landscaping provisions must be in compliance with Caltrans' current landscaping and water conservation policies.

– Permits

Many agencies require permits before a project can be approved for construction. These permits often require mitigation. It is essential that potential permits be identified at the earliest stage and the cost for mitigation estimated.

– Local and Regional Input

Local and regional input is mandatory in the preparation of PSR estimates. Local planning (land use) can have a significant effect on the local and regional planning transportation system which, in turn, affects the identification of viable alternatives and project specific features.

PSR Preparation (cont.)

– Right of Way

The Right of Way Estimate should be prepared using aerial mapping, mosaics or as built plans at 1" = 50' or 1" = 100' for urban areas or 1" = 200' (preferably 100 scale) for rural areas. The mapping shall show:

- Improvements
- Property Ownership
- Assessors parcel numbers
- Size of each parcel
- Proposed right-of-way lines
- Access control
- Easements (permanent & temporary)
- Significant property ingress modifications
- Utilities
- Railroad facilities

– Design Standards

It is very important that sufficient detail be included in the PSR so that future revisions to basic design features and project scope are held to the absolute minimum. As a minimum, deviations from mandatory design standards (see Index 82.3 of the Caltrans Highway Design Manual) shall be indicated and any exceptions shall be approved by the appropriate individuals prior to PSR approval. Approval of nonstandard mandatory design features is required from the Headquarters Office of Project Planning and Design. Approval by the Federal Highway Administration may also be required.

The basic design features that must be identified are:

- Lane width, shoulder width, and bridge width
- Design speed
- Cross slope
- Grade
- Superelevation
- Stopping sight distance
- Horizontal and vertical alignment
- Horizontal and vertical clearance
- Bridge structural capacity

PSR Preparation (cont.)

There are additional design features, Caltrans' practices, and mandatory design standards contained in Caltrans' manuals and policy documents that should be considered for inclusion in the project. Nonstandard design features should be approved prior to PSR approval and should be identified in the PSR.

The request for approval of nonstandard mandatory design features shall be in the form of a "Fact Sheet". Incremental and other alternatives to the proposed nonstandard design features are an important factor.

The format of the "Fact Sheet" will be provided by the Project Manager during the pre-PSR meeting. The "Fact Sheet" format will include:

1. Description of the project.
2. Project cost.
3. Description of the existing highway.
4. Proposed nonstandard features.
5. Reasons for the nonstandard features.
6. Added cost to make standard.
7. Traffic and safety data and discussion.
8. Incremental and other alternatives to the proposed nonstandard design.
9. Plan drawings, cross sections, photos, etc., to show the problem and justify the nonstandard features.

Design standards are applied equally to all projects on the State Highway System regardless of the sponsoring agency or the type of funding involved.

Nonstandard advisory design features must be identified and approved in accordance with Caltrans procedures prior to PSR approval as they may have a considerable financial impact on the project.

Cost Estimates

Cost estimates shall be prepared in accordance with Chapter 4 of these guidelines. A local entity may separately identify capital support costs in the PSR.

Complete PSR

After developing feasible alternatives and analyzing impacts, the PSR is prepared in accordance with the outline in Chapter 3 of these guidelines. The PSR should not contain recommendations for programming. Recommendations concerning these items should be included in the transmittal memorandum to the District Director.

Submit PSR

The PSR is submitted for approval to the Caltrans District Director.

The transmittal memo should contain:

1. Source of study request.

2. Any recommendation concerning alternatives developed, including the alternative to be the basis for programming.

3. A written memorandum of agreement indicating the local funding commitment if the proposed work is to be partially or 100 percent funded by others.

Caltrans District Review

Statutes require Caltrans to review and approve a PSR prepared by a local entity within 60 days of submittal (if no revisions are required).

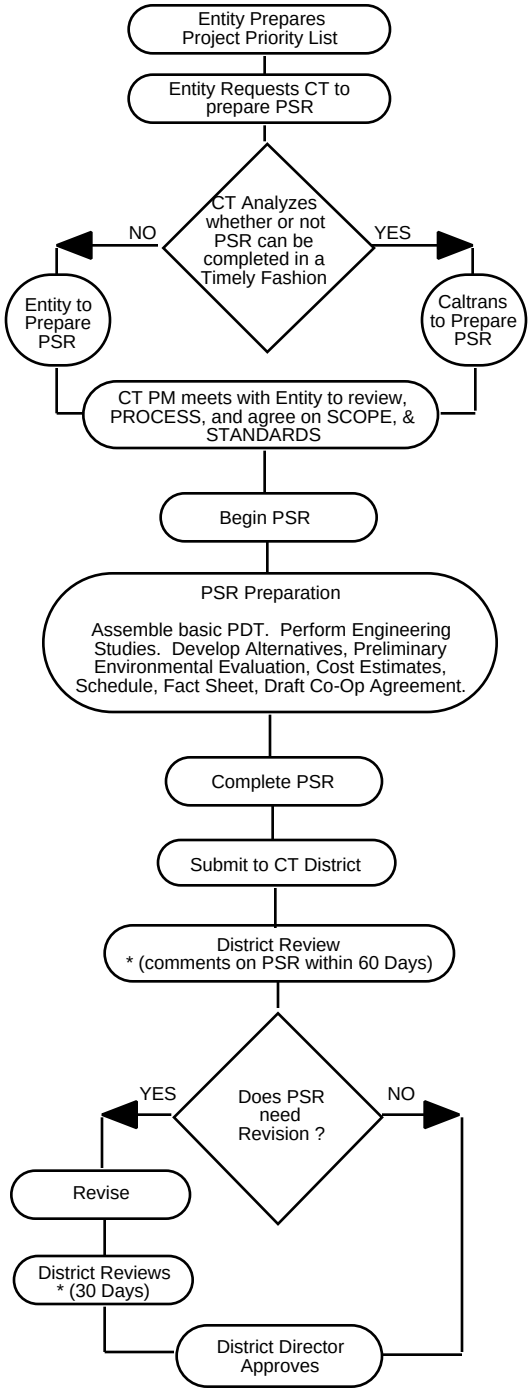
If revisions are required, the local entity preparing the PSR will be notified within 60 days of submittal as required by the statutes. Notification by the District will contain a statement(s) on why the PSR is unacceptable, including reference to any inconsistencies to these guidelines.

Caltrans District Approval

Caltrans will review and approve the revised PSR within 30 days. However, in the event that the document does not meet the provisions of the guidelines, it may be necessary to return the PSR to the local entity for further revision. The review and approval cycle will then be repeated.

The Caltrans District Director is responsible for approving the project's scope, schedule, and cost within these established guidelines and may exercise engineering judgment and flexibility in approving the PSR document. PSRs are to be approved by the District Director after review by the Project Development Team. Project Managers are to endorse the decision by "Approval Recommended By" or "Approved By" where such authority has been delegated.

FLOWCHART FOR THE PREPARATION OF PROJECT STUDY REPORTS



TIME LINE (Calendar Days)

	CE	ND,EIS/EIR
Entity Prepares Project Priority List		
Entity Requests CT to prepare PSR	7	7
CT Analyzes whether or not PSR can be completed in a Timely Fashion	15	30 **
CT PM meets with Entity to review, PROCESS, and agree on SCOPE, & STANDARDS	7	60
Begin PSR	1	7
PSR Preparation	76	140
Complete PSR	10	21
Submit to CT District	1	7
District Review * (comments on PSR within 60 Days)	30	60 **
Revise	14	14
District Reviews * (30 Days)	15	30 **
District Director Approves	1	1
	177 days (6 Months)	377 days (13 Months)

* Information in ( ) applies to other than CT prepared PSRS

** Maximum time period identified in statutes

Note: Times shown are “typical” and may be longer or shorter depending upon project complexity.

CHAPTER 3

Project Study Report Outline

Dist. - Co. - Rte. - PM.
Month/Year

PROJECT STUDY REPORT

Vicinity Map

Show:

- Study limits
- Topographical Features Listed in Report
- North Arrow

On Route_____

Between_____

And _____

APPROVAL RECOMMENDED:

_____
PROJECT MANAGER

APPROVED:

_____ _____
DISTRICT DIRECTOR *DATE*

Dist. - Co. - Rte. - PM.

This Project Study Report has been prepared under the direction of the following Registered Engineer. The registered Civil Engineer attests to the technical information contained therein and has judged the qualifications of any technical specialists providing engineering data upon which recommendations, conclusions, and decisions are based.

_____ _____

REGISTERED CIVIL ENGINEER *DATE*

OUTLINE
PROJECT STUDY REPORT

Dist.-Co.-Rte.-P.M.
RU EA
Program
Identification
Project Limits

1. Introduction - One paragraph maximum - What's the proposal? Why is it needed? The range of alternatives and costs. Indicate source of study request (CTC, RTIP, local government, Caltrans, etc.). Funding source.

2. Background - Briefly cover any prior project history that will help understand the situation. Have any commitments been made? Does the project have outside support or opposition?

3. Need and Purpose - Provide a concise discussion of the need and purpose of the proposal supplemented as needed by attached maps, charts, tables, letters, etc. As applicable, discuss existing and forecasted traffic, level of service, capacity adequacy, and safety data. What are the physical, economic, social, and environmental constraints that would affect the solution? Discuss the need and purpose of the land-use development proposal(s) generating need for the State highway improvement. Briefly list any controversial aspects or issues of both the development and the proposed highway work.

4. Alternatives - Briefly discuss project alternatives and variations of the project that will satisfy project goals, be cost effective, and avoid or minimize environmental and right-of-way effects. Give right of way and construction costs. Attach schematic maps of the alternatives and typical cross-sections as appropriate.

   When some or all of the potential alternatives were developed through the application of the VE process, this should be elaborated in the report.

   Analysis of Proposal - Discuss and analyze existing and forecasted traffic. Cover capacity adequacy of main line to accommodate added traffic. Are there alternative solutions? Give estimated costs. State the assumptions used in the right of way estimate. Discuss any potential adverse operational impacts on the State highway due to the proposal. Should additional work be done to alleviate adverse impacts? Attach maps as appropriate to the proposal, alternatives (schematic geometrics), adjacent segments, and land uses.

5. System Planning - Discuss the coordination and consistency of the proposed project with statewide, regional and local planning efforts using the District System Management Plan (DSMP) and Transportation Concept Reports (formerly Route Concept Reports). Discuss the coordination and consistency of the proposed project with statewide, regional and local planning using local and regional planning documents such as local general, specific area, and subdivision plans, the Regional Transportation Plans (RTP), Congestion Management Program (CMP), State Implementation Plan (SIP), and information on expected timing of future local development.

6. Hazardous Material/Waste - Identify existing known waste sites within or immediately adjacent to the proposed project. Discuss how probable project alternatives may affect the sites.

7. Traffic Management Plan (TMP) - Determine the need for a TMP. Is "significant delay" due to construction anticipated? Analyze the factors associated with the traffic impacts during construction. If a TMP is required, identify the TMP elements that would mitigate these traffic impacts and their associated costs.

8. Environmental Clearance - Briefly describe the inventory of environmental resources and identify environmental issues. Are there potential adverse impacts that would affect the viability of alternatives? Describe the type of environmental clearance to be obtained for CEQA and identify who should be the lead agency. When a Negative Declaration is the type of environmental clearance anticipated, it should be qualified with "… because no significant resources appear to be impacted. More detailed studies may change this conclusion." The environmental issues should be discussed in sufficient detail to determine if extensive studies or time-consuming processes that affect schedules are involved. Describe the type of environmental clearance for compliance with NEPA when involved. If the highway work is to be part of a larger overall local agency development EIR, what steps are needed for any required FHWA approvals? An identification of the permits that may have significant impact on the proposal is necessary. Any mitigation that requires R/W cost or time to develop or negotiate must be identified. The PSR must also discuss whether the proposal complies with the requirements of the 1990 Federal Clean Air Act.

9. Funding/Scheduling - Identify funding responsibilities and/or sources of funding for the project. Provide a tentative milestone schedule for the following milestones: Submit Project Report, Environmental Clearance, Bridge Site Data, Maps to Right of Way, PS&E, and Right of Way Certification. This schedule determines the earliest programming based on the actual or assumed start date for project development. The cost estimate provided in this report should then be escalated to the proposed program year to establish the program base cost for the project.

10. District Contact - Give name and phone number of District representative to be contacted concerning questions on the PSR submittal.

11. Registered Civil Engineer Stamp - The Registered Civil Engineer's stamp or seal and number with signature shall be placed on a separate sheet which shall be part of the report. Also included on this sheet shall be a statement indicating the Registered Civil Engineer is attesting to the technical information contained therein and is judging qualifications of any technical specialist providing engineering data upon which recommendations, conclusions, and decisions are based. The approval of the report will be a management decision.

12. Project Manager - In the concept of project management, responsibility for project development is assigned to a single individual [i.e., the Project Manager (PM)] for every State and special funded capital outlay project on the State highway system. PSRs are to include the endorsement of the PM; i.e., "APPROVAL RECOMMENDED BY" or "APPROVED BY" where authority has been delegated.

The following shall be attached to a PSR:

- Appropriate maps.
- Approved estimate using appropriate format. The estimate must be attached to the PSR as a backup for the studies and costs performed.
- A draft cooperative agreement with the local agency or a Highway Improvement Agreement with a private developer for projects partially or 100 percent funded by others.
- Backup data for determining cost sharing percentages in accordance with the April 1984 CTC policy on interchanges and separations (if not previously submitted and approved).
- Priority rating sheet for applicable funding program based on current data.

CHAPTER 4

PSR Estimates

ARTICLE 1 - Estimate Components

General

The PSR Estimate must be as realistic and accurate as possible. The degree of effort and detail one each study is expected to vary depending upon complexity and sensitivity of the issues.

Additional Information

Additional information that must be obtained includes existing and forecasted traffic, materials information (particularly where foundation and slope stability problems can be anticipated), advance structure estimates for widening existing structures as well as new facilities, hazardous waste assessment, potential environmental issues and mitigation, right of way and utilities, traffic handling, etc.

Because the PSR Estimate is used to make Programming decisions for the STIP, the importance of an accurate estimate cannot be overemphasized.

Contingencies should be 25% at this stage; however, a higher or lower percentage may be used if justified. The contingency is expected to cover unanticipated items of work or cost increases.

ARTICLE 2 - Project Cost Estimate Summary Sheets

The cost estimate should be prepared using the following Preliminary Project Cost Estimate Summary. This will identify items that need to be considered and included in the project. It is very important that all known items of work be identified and estimated. It is recognized that not all projects will have each and every item listed on the Cost Summary Sheets. In some instances, not all of the items can be identified at this stage and an appropriate contingency factor should therefore be applied to reflect other possible items. It is also necessary to periodically review and update cost estimates as the project proceeds through the project development process. Any substantial increase in cost should be discussed, as appropriate, with the funding sponsor and RTPA.

A more detailed "Cost Estimating Guideline" is available upon request from the Office of Project Planning & Design. This guideline provides information on standard specification groupings for roadway items and is compatible with the Basic Engineering Estimating System (BEES).

PRELIMINARY PROJECT COST ESTIMATE SUMMARY

DIST-CO-RTE

Type of Estimate (Pre-PSR, PSR, PR, etc.)
Program Code
PM
EA
PP No.

Project Description:

Limits _____

Proposed Improvement (Scope) _____

Alternative _____

ROADWAY ITEMS	$ _____
STRUCTURE ITEMS	$ _____
SUBTOTAL CONSTRUCTION	$ _____
RIGHT OF WAY (Current Value)	$ _____
TOTAL PROJECT COST	$ _____

Reviewed by Program Manager Signature _____ Date _____

Approved by Project Manager Signature _____ Phone No. _____ Date _____

Sheet 1 of 6

PRELIMINARY PROJECT COST ESTIMATE SUMMARY

DIST-CO-RTE

PM

EA

PP NO.

I. ROADWAY ITEMS

Section 1 Earthwork	Quantity	Unit	Unit Price	Unit Cost	Section Cost
Roadway Excavation			$	$	
Imported Borrow			$	$	
Clearing & Grubbing			$	$	
Develop Water Supply			$	$	
			$	$	
				Total Earthwork	$

Section 2 Structural Section*

PCC Pavement (____Depth)			$	$	
PCC Pavement (____Depth)			$	$	
Asphalt Concrete			$	$	
Lean Concrete			$	$	
Cement-Treated Base			$	$	
Aggregate Base			$	$	
Aggregate Subbase			$	$	
Permeable Material Blanket & Edge Drains			$	$	
			$	$	
				Total Structural Items	$

Section 3 Drainage

Large Drainage Facilities			$	$	
Storm Drains			$	$	
Pumping Plants			$	$	
Project Drain (X-Drains, oversize, etc.)			$	$	
			$	$	
				Total Drainage	$

* Attach sketch showing typical structural section elements of the roadway. Include (if available) T.I., R-Value and date when tests were performed.

Sheet 2 of 6

PRELIMINARY PROJECT COST ESTIMATE SUMMARY

DIST-CO-RTE

PM

EA

PP NO.

Section 4 Specialty Items	Quantity	Unit	Unit Price	Unit Cost	Section Cost
Retaining Walls			$	$	
Soundwalls			$	$	
Equipment/Animal Passes			$	$	
Relocate Private Irrigation Facilities			$	$	
Landscaping/Irrigation (normally separate project)			$	$	
Erosion Control			$	$	
Slope Protection			$	$	
Barriers and Guardrails			$	$	
Hazardous Waste Work			$	$	
Environmental Mitigation			$	$	
			$	$	
			$	$	
				Total Specialty Items	$

Section 5 Traffic Items

Lighting			$	$	
Traffic Signals			$	$	
Permanent Signing			$	$	
Traffic Control Systems			$	$	
Traffic Management Plan			$	$	
			$	$	
				Total Traffic Items	$

SUBTOTAL SECTIONS 1-5 $

Sheet 3 of 6

PRELIMINARY PROJECT COST ESTIMATE SUMMARY

DIST-CO-RTE

PM

EA

PP NO.

Section 6 Minor Item			Unit Cost	Section Cost
Subtotal Sections 1-5	$_____	x (5-10%)	$_____	
			Total Minor Items	$_____
Section 7 Roadway Mobilization				
Subtotal Sections 1-5	$_____			
Minor Items	$_____			
Sum	$_____	x (5-10%)	$_____	
			Total Roadway Mobilization	$_____
Section 8 Roadway Additions				
Supplemental				
Subtotal Sections 1-5	$_____			
Minor Items	$_____			
Sum	$_____	x (5-10%)	$_____	
Contingencies				
Subtotal Sections 1-5	$_____			
Minor Items	$_____			
Sum	$_____	x (____)*	$_____	
			Total Roadway Additions	$_____
			TOTAL ROADWAY ITEMS	$_____
				(Total of Sections 1-8)

Estimate Prepared by _____Phone_____Date_____
(Print Name)

* Use 25% at the PSR stage or a higher or lower rate if justified.

Sheet 4 of 6

PRELIMINARY PROJECT COST ESTIMATE SUMMARY

DIST-CO-RTE

PM
EA
PP NO.

II. STRUCTURE ITEMS

	STRUCTURE No. 1	No. 2	No. 3	
Bridge Name				*
Structure Type				
Width ft. (out to out)				
Span Lengths Ft.				
Total Area Sq. Ft.				
Footing Type (pile/spread)				
Cost Per Sq. Ft. (incl. 10% mobilization and 25% contingency)				
Total Cost for Structure				
Other				

* Add additional structures as necessary

SUBTOTAL STRUCTURES ITEMS $_____

Railroad Related Costs _____ _____ _____ $_____

TOTAL STRUCTURES ITEMS $_____

Estimate Prepared by _____ Phone_____ Date_____
(Print Name)

(If appropriate, attach additional pages and backup)

Sheet 5 of 6

PRELIMINARY PROJECT COST ESTIMATE SUMMARY

DIST-CO-RTE

PM
EA
PP NO.

III. RIGHT OF WAY

Right of Way estimates should consider the probable highest and best use and type and intent of improvements at the time of acquisition. Assume acquisition including utility relocation occurs at the right of way certification milestone as shown in the Funding and Scheduling Section of the PSR. For further guidance see Chapter I, Caltrans, Right of Way Procedural Handbook.

	Current Values (Future Use)	Escalation Rates	Escalated Values*
Acquisition, including excess lands and damages to remainder(s)	$_____	_____ %	$_____
Utility Relocation (State share)	$_____	_____ %	$_____
Clearance/Demolition	$_____	_____ %	$_____
RAP	$_____	_____ %	$_____
Title and Escrow Fees	$_____	_____ %	$_____
CONSTRUCTION CONTRACT WORK	$_____	_____ %	$_____
TOTAL RIGHT OF WAY (CURRENT VALUE)**	$_____	TOT. ESC. R/W	$_____

* Escalated to assumed year of advertising of _____.
** Current total value for use on Sheet 1 of 6

Estimate Prepared by _____ Phone_____ Date_____
(Print Name)

(If appropriate, attach additional pages and backup including Right of Way Data Sheet).

Sheet 6 of 6